

09/831142

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PATENTS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Anthony Keith CAMPBELL

Serial No.

Filed herewith

PROTEIN AND DNA CODING THEREFOR

**SUBMISSION UNDER 37 C.F.R. §821
FOR PATENT APPLICATIONS CONTAINING NUCLEOTIDE
SEQUENCE AND/OR AMINO ACID SEQUENCE DISCLOSURES**

Assistant Commissioner for Patents

Washington, D.C. 20231

Sir:

Applicant attach to the present paper a "Sequence Listing", as required by Rule 821(c), and a copy of the "Sequence Listing" in computer readable form, as required by Rule 821(e).

Applicant hereby states that the content of the attached paper and computer readable copy of the Sequence Listing are the same.

Respectfully submitted,

YOUNG & THOMPSON

By

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May 7, 2001

SEQUENCE LISTING

<110> CAMPBELL, ANTHONY KEITH

<120> PROTEIN AND DNA CODING THEREFOR

<130> WCM.69.US

<140> 09/831,142

<141> 2001-05-07

<150> PCT/GB99/03654

<151> 1999-11-05

<150> GB 9824357.9

<151> 1998-11-07

<160> 42

<170> PatentIn Ver. 2.1

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<211> 870

<212> DNA

<213> Pholas dactylus

<220>

<221> CDS

<222> (30)..(704)

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Leu	Val	Ala	Leu	Cys	Leu	Met	Gln	Pro	Gly	Ser	Gly	Glu	Glu	Val	Gln	
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tgc	gcg	atg	aat	tgg	aca	caa	gct	aat	gaa	tat	gtg	ttc	aac	gtg	gac	149
Cys	Ala	Met	Asn	Trp	Thr	Gln	Ala	Asn	Glu	Tyr	Val	Phe	Asn	Val	Asp	
25					30					35			40			

tgg	atg	acc	att	ttc	atc	tac	gac	tat	ggc	gct	caa	gag	caa	ctg	tac	197
Trp	Met	Thr	Ile	Phe	Ile	Tyr	Asp	Tyr	Gly	Ala	Gln	Glu	Gln	Leu	Tyr	
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Glu	Asp	Arg	Ala	Leu	Gly	Leu	Cys	Arg	Ile	Glu	Arg	Ala	Gly	Pro	Gly	
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acc	aca	aaa	gcc	gtc	tgg	att	aac	tgg	agt	aac	gac	acg	cag	tca	tgt	293
Thr	Thr	Lys	Ala	Val	Trp	Ile	Asn	Trp	Ser	Asn	Asp	Thr	Gln	Ser	Cys	
75						80				85						

gta	aca	aga	aaa	aca	atc	ttc	ttc	gag	gtt	ggt	gga	gaa	att	gcc	cg	341
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Arg Lys Phe Ser Ser Lys Met Pro Gly Thr Tyr Met Leu Met Asp Val	
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Cys Ala Thr Arg Asp Ala Asp Asp Lys Cys Ile Glu Gly Thr Ile Val	
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Val Thr Val Arg Val Ser Leu Tyr Asp Glu Asp Asn Asn Gly Val Met	
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Asp Glu Gly Lys Val Ile Pro Ser Glu Thr Ile Glu Asp Asp Ile Lys	
170 175 180	
gac tgt ggg ctc tta gac caa gat gtt gaa ctc gat tat acg tgg act	629
Asp Cys Gly Leu Leu Asp Gln Asp Val Glu Leu Asp Tyr Thr Trp Thr	
185 190 195 200	
caa aac gag tgt gat cta cca gac aca gta gac gag gct gaa gac aca	677
Gln Asn Glu Cys Asp Leu Pro Asp Thr Val Asp Glu Ala Glu Asp Thr	
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Pro Ser Glu Thr Gly Glu Phe Trp	
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aaggttattc catctgagac aatcgaggat gatatacagg actgtggct cttagaccaa 600	
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 35 40 45

Tyr Gly Ala Gln Glu Gln Leu Tyr Glu Asp Arg Ala Leu Gly Leu Cys
 50 55 60

Arg Ile Glu Arg Ala Gly Pro Gly Thr Thr Lys Ala Val Trp Ile Asn
 65 70 75 80

Trp Ser Asn Asp Thr Gln Ser Cys Val Thr Arg Lys Thr Ile Phe Phe
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Glu Val Gly Gly Glu Ile Ala Arg Leu Val Asp Tyr Arg Pro Gln Glu
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Asp Gly Thr Glu Lys Thr Phe Thr Arg Lys Phe Ser Ser Lys Met Pro
 115 120 125

Gly Thr Tyr Met Leu Met Asp Val Cys Ala Thr Arg Asp Ala Asp Asp
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Lys Cys Ile Glu Gly Thr Ile Val Val Thr Val Arg Val Ser Leu Tyr
 145 150 155 160

Asp Glu Asp Asn Asn Gly Val Met Asp Glu Gly Lys Val Ile Pro Ser
 165 170 175

Glu Thr Ile Glu Asp Asp Ile Lys Asp Cys Gly Leu Leu Asp Gln Asp
 180 185 190

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Trp
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 35 40 45

Ala Gly Pro Gly Thr Thr Lys Ala Val Trp Ile Asn Trp Ser Asn Asp
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Thr Gln Ser Cys Val Thr Arg Lys Thr Ile Phe Phe Glu Val Gly Gly
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Glu Ile Ala Arg Leu Val Asp Tyr Arg Pro Gln Glu Asp Gly Thr Glu
 85 90 95

Lys Thr Phe Thr Arg Lys Phe Ser Ser Lys Met Pro Gly Thr Tyr Met
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Leu Met Asp Val Cys Ala Thr Arg Asp Ala Asp Asp Lys Cys Ile Glu
 115 120 125

Gly Thr Ile Val Val Thr Val Arg Val Ser Leu Tyr Asp Glu Asp Asn
 130 135 140

Asn Gly Val Met Asp Glu Gly Lys Val Ile Pro Ser Glu Thr Ile Glu
 145 150 155 160

Asp Asp Ile Lys Asp Cys Gly Leu Leu Asp Gln Asp Val Glu Leu Asp
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 <213> Pholas dactylus

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 35 40 45

Tyr Gly Ala Gln Glu Gln Leu Tyr Glu Asp Arg Ala Leu Gly Leu Cys
 50 55 60

Arg Ile Glu Arg Ala Gly Pro Gly Thr Thr Lys Ala Val Trp Ile Asn
 65 70 75 80

Trp Ser Asn Asp Thr Gln Ser Cys Val Thr Arg Lys Thr Ile Phe Phe
 85 90 95

Glu Val Gly Gly Glu Ile Ala Arg Leu Val Asp Tyr Arg Pro Gln Glu
 100 105 110

Asp Gly Thr Glu Lys Thr Phe Thr Arg Lys Phe Ser Ser Lys Met Pro
 115 120 125

Gly Thr Tyr Met Leu Met Asp Val Cys Ala Thr Arg Asp Ala Asp Asp
 130 135 140

Lys Cys Ile Glu Gly Thr Ile Val Val Thr Val Arg Val Ser Leu Tyr
 145 150 155 160

Asp Glu Asp Asn Asn Gly Val Met Asp Glu Gly Lys Val Ile Pro Ser
 165 170 175

Glu Thr Ile Glu Asp Asp Ile Lys Asp Cys Gly Leu Leu Asp Gln Asp
 180 185 190

Val Glu Leu Asp Tyr Thr Trp Thr Gln Asn Glu Cys Asp Leu Pro Asp
 195 200 205

Thr Val Asp Glu Ala Glu Asp Thr Pro Ser Glu Thr Gly Glu Phe Phe
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Trp
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 <212> DNA
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<210> 12
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<220>
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<210> 13
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 <212> DNA
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<210> 14
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<212> DNA
<213> Artificial sequence

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<400> 14
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19

<210> 15
<211> 17
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726

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 <213> *Saccharomyces cerevisiae*

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Thr Trp

<210> 25
 <211> 31

<212> PRT

<213> Cyprinus carpio

<400> 25

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<210> 26

<211> 20

<212> PRT

<213> Synechocystis sp.

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Phe Asn Phe Asp

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<211> 14

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<213> Emericella nidulans

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<213> Drosophila melanogaster

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<210> 29

<211> 13

<212> PRT

<213> Peptococcus niger

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<210> 30

<211> 25

<212> PRT

<213> Homo sapiens

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 <213> Vargula sp.

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Ser Ile Pro Tyr Ser Ser Glu Asn Thr Ser Ile
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 <213> Renilla sp.

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 1 5 10 15

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 50 55 60

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<210> 34
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illustrative peptide

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<210> 36
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<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic
illustrative peptide

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Asp Lys Glu

<210> 37
<211> 16
<212> PRT
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illustrative peptide

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<210> 38
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<223> Description of Artificial Sequence: Synthetic
illustrative peptide

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<210> 39
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
illustrative peptide

<400> 39
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<210> 40
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<220>
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illustrative peptide

<400> 40
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<210> 41
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illustrative peptide

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<210> 42
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Illustrative
N-terminal acylation motif from Tyrosine kinase

<400> 42
Met Gly Cys Val Cys Ser Ser Asn Pro Asp
1 5 10

SEQUENCE LISTING

<110> University of Wales College of Medicine

<120> Protein and DNA coding therefor

<130> PCT/GB99/03654

<140> PCT/GB99/03654

<141> 1999-11-05

<160> 22

<170> PatentIn Ver. 2.1

<210> 1

<211> 870

<212> DNA

<213> Pholas dactylus

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acgaggctga agacacacccg tcagaaactg gagaattctt ctggtagatc tatcagacta 720
cttttatcag caggacaact ggtcggttacc agacacctat aacgtgtcct catcaataat 780
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870

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gctaatgaat atgtgttcaa cgtggactgg atgaccattt tcatctacga ctatggcgct 180
caagagcaac tgtacgagga tcgggctttg gggctgtgtc ggattgaacg ggccggccca 240
ggtaccacaa aagccgtctg gattaactgg agtaacgaca cgcagtcgt tgtaacaaga 300
aaaacaatct tcttcgaggt tggtggagaa attgcccggc tagttgacta cagaccacag 360
gaagacggaa ctgagaaaac ttttacaaga aaattctcta gcaaaatgcc aggcacttac 420
atgcttatgg acgtgtgcgc tacaagggac gctgatgata aatgcacatcgaa aggcacaatt 480
gtggtgacag tcaggggtgtc cctatatgac gaagataaca atgggttaat ggatgaaggt 540
aaggttattc catctgagac aatcgaggat gatatcaagg actgtgggct cttagaccaa 600
gatgttgaac tcgattatac gtggactcaa aacgagtgtg atctaccaga cacagtagac 660
gaggctgaag acacaccgtc agaaaactgga gaattcttct ggtagatcta tcagaccact 720
tttatcagca ggacaactgg tcgttaccag acacctataa cgtgtcctca tcaataatgt 780
gtaaaaacaga aataatcgat agaatattga aaataa 816

<210> 3
<211> 852
<212> DNA
<213> Pholas dactylus

<400> 3
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tgtgttcaac gtggactgga tgaccatTTT catctacgac tatggcgctc aagagcaact 180
gtacgaggat cgggcttgg ggctgtgtcg gattgaacgg gccggcccag gtaccacaaa 240
agccgtctgg attaactgga gtaacgacac gcagtcatgt gtaacaagaa aaacaatctt 300
cttcgaggTTT ggtggagaaa ttgcccggct agttgactac agaccacagg aagacggaac 360
tgagaaaaact tttacaagaa aattctctag caaaatgccca ggcacttaca tgcttatgga 420
cgtgtgcgct acaagggacg ctgatgataa atgcatcgaa ggcacaattg tggtgacagt 480
cagggtgtcc ctatatgacg aagataacaa tggtgtaatg gatgaaggta aggttattcc 540
atctgagaca atcgaggatg atatcaagga ctgtgggctc tttagaccaag atgttgaact 600
cgattatacg tggactcaaa acgagtgtga tctaccagac acagtagacg aggctgaaga 660
cacaccgtca gaaactggag aattcttctg gtagatctat cagaccactt ttatcagcag 720
gacaactggcgttaccaga cacctataac gtgtcctcat caataatgtg taaaacagaa 780
ataatcgata gaatattgaa aataaaatgt taatagacac tggttgaaaa aaaaaaaaaa 840
aaaaaaaaactcg ag 852

<210> 4
<211> 225
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<213> Pholas dactylus

<400> 4
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Pro Gly Ser Gly Glu Glu Val Gln Cys Ala Met Asn Trp Thr Gln Ala
20 25 30
Asn Glu Tyr Val Phe Asn Val Asp Trp Met Thr Ile Phe Ile Tyr Asp
35 40 45
Tyr Gly Ala Gln Glu Gln Leu Tyr Glu Asp Arg Ala Leu Gly Leu Cys
50 55 60
Arg Ile Glu Arg Ala Gly Pro Gly Thr Thr Lys Ala Val Trp Ile Asn

65

70

75

80

Trp Ser Asn Asp Thr Gln Ser Cys Val Thr Arg Lys Thr Ile Phe Phe
 85 90 95

Glu Val Gly Gly Glu Ile Ala Arg Leu Val Asp Tyr Arg Pro Gln Glu
 100 105 110

Asp Gly Thr Glu Lys Thr Phe Thr Arg Lys Phe Ser Ser Lys Met Pro
 115 120 125

Gly Thr Tyr Met Leu Met Asp Val Cys Ala Thr Arg Asp Ala Asp Asp
 130 135 140

Lys Cys Ile Glu Gly Thr Ile Val Val Thr Val Arg Val Ser Leu Tyr
 145 150 155 160

Asp Glu Asp Asn Asn Gly Val Met Asp Glu Gly Lys Val Ile Pro Ser
 165 170 175

Glu Thr Ile Glu Asp Asp Ile Lys Asp Cys Gly Leu Leu Asp Gln Asp
 180 185 190

Val Glu Leu Asp Tyr Thr Trp Thr Gln Asn Glu Cys Asp Leu Pro Asp
 195 200 205

Thr Val Asp Glu Ala Glu Asp Thr Pro Ser Glu Thr Gly Glu Phe Phe
 210 215 220

Trp
 225

<210> 5
 <211> 205
 <212> PRT
 <213> Pholas dactylus

<400> 5
 Glu Glu Val Gln Cys Ala Met Asn Trp Thr Gln Ala Asn Glu Tyr Val
 1 5 10 15

Phe Asn Val Asp Trp Met Thr Ile Phe Ile Tyr Asp Tyr Gly Ala Gln
 20 25 30

Glu Gln Leu Tyr Glu Asp Arg Ala Leu Gly Leu Cys Arg Ile Glu Arg
 35 40 45

Ala Gly Pro Gly Thr Thr Lys Ala Val Trp Ile Asn Trp Ser Asn Asp

50

55

60

Thr Gln Ser Cys Val Thr Arg Lys Thr Ile Phe Phe Glu Val Gly Gly
65 70 75 80

Glu Ile Ala Arg Leu Val Asp Tyr Arg Pro Gln Glu Asp Gly Thr Glu
85 90 95

Lys Thr Phe Thr Arg Lys Phe Ser Ser Lys Met Pro Gly Thr Tyr Met
100 105 110

Leu Met Asp Val Cys Ala Thr Arg Asp Ala Asp Asp Lys Cys Ile Glu
115 120 125

Gly Thr Ile Val Val Thr Val Arg Val Ser Leu Tyr Asp Glu Asp Asn
130 135 140

Asn Gly Val Met Asp Glu Gly Lys Val Ile Pro Ser Glu Thr Ile Glu
145 150 155 160

Asp Asp Ile Lys Asp Cys Gly Leu Leu Asp Gln Asp Val Glu Leu Asp
165 170 175

Tyr Thr Trp Thr Gln Asn Glu Cys Asp Leu Pro Asp Thr Val Asp Glu
180 185 190

Ala Glu Asp Thr Pro Ser Glu Thr Gly Glu Phe Phe Trp
195 200 205

<210> 6

<211> 225

<212> PRT

<213> Pholas dactylus

<400> 6

Met Ala Cys Ile Val Phe Val Ala Leu Val Ala Leu Cys Leu Met Gln
1 5 10 15

Pro Gly Ser Gly Glu Glu Val Gln Cys Ala Met Asn Trp Thr Gln Ala
20 25 30

Asn Glu Tyr Val Phe Asn Val Asp Trp Met Thr Ile Phe Ile Tyr Asp
35 40 45

Tyr Gly Ala Gln Glu Gln Leu Tyr Glu Asp Arg Ala Leu Gly Leu Cys
50 55 60

Arg Ile Glu Arg Ala Gly Pro Gly Thr Thr Lys Ala Val Trp Ile Asn

65 70 75 80

Trp Ser Asn Asp Thr Gln Ser Cys Val Thr Arg Lys Thr Ile Phe Phe
85 90 95

Glu Val Gly Gly Glu Ile Ala Arg Leu Val Asp Tyr Arg Pro Gln Glu
100 105 110

Asp Gly Thr Glu Lys Thr Phe Thr Arg Lys Phe Ser Ser Lys Met Pro
115 120 125

Gly Thr Tyr Met Leu Met Asp Val Cys Ala Thr Arg Asp Ala Asp Asp
130 135 140

Lys Cys Ile Glu Gly Thr Ile Val Val Thr Val Arg Val Ser Leu Tyr
145 150 155 160

Asp Glu Asp Asn Asn Gly Val Met Asp Glu Gly Lys Val Ile Pro Ser
165 170 175

Glu Thr Ile Glu Asp Asp Ile Lys Asp Cys Gly Leu Leu Asp Gln Asp
180 185 190

Val Glu Leu Asp Tyr Thr Trp Thr Gln Asn Glu Cys Asp Leu Pro Asp
195 200 205

Thr Val Asp Glu Ala Glu Asp Thr Pro Ser Glu Thr Gly Glu Phe Phe
210 215 220

Trp
225

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<212> DNA
<213> Pholas dactylus

<220>
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<400> 7
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17

<210> 8

<211> 17
<212> DNA
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<220>
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<222> (15)
<223> i

<400> 8
cargargarg gnacnnga

17

<210> 9
<211> 17
<212> DNA
<213> Pholas dactylus

<220>
<221> modified_base
<222> (3)
<223> i

<400> 9
tcngtnccyt cytcytg

17

<210> 10
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<212> DNA
<213> Pholas dactylus

<220>
<221> modified_base
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18

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<212> DNA
<213> Pholas dactylus

<400> 11
acacagcccc aaagcccgat

20

<210> 12
<211> 20
<212> DNA
<213> Pholas dactylus

<400> 12
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<210> 13
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<212> DNA
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<400> 13
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24

<210> 14
<211> 19
<212> DNA
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<400> 14
caatttgtgcc ttcgatgca

19

<210> 15
<211> 17
<212> DNA
<213> Pholas dactylus

<400> 15
ggactgtggg ctcttag

17

<210> 16
<211> 20
<212> DNA
<213> Pholas dactylus

<400> 16
atggcttgta tcgaaaaat

20

<210> 17
<211> 27
<212> DNA
<213> Pholas dactylus

<400> 17
ccacacggat cctgaggaag tacaatg

27

<210> 18
<211> 27
<212> DNA
<213> Pholas dactylus

<400> 18
ccacacggat ccttatttgat gaggaca

27

<210> 19
<211> 53
<212> DNA
<213> Pholas dactylus

<400> 19
cttggttttta tggtcgtcta catttcttac atctatgcgg aggaagtaca atg

53

<210> 20
<211> 54
<212> DNA
<213> Pholas dactylus

<400> 20
ccacacagat ctagaatgaa attcttagtc aacgttgccc ttgttttat ggtc

54

<210> 21
<211> 24
<212> DNA
<213> Pholas dactylus

<400> 21
tttactgttt tcgtaacagt tttg

24

<210> 22
<211> 20
<212> DNA
<213> *Pholas dactylus*

<400> 22
caacaacgca cagaatctag

20